REMARKS

Reconsideration and allowance of the above-referenced application are respectfully requested.

I. STATUS OF THE CLAIMS

Claims 18-34 are amended herein.

In view of the above, it is respectfully submitted that claims 18-34 are currently pending and under consideration.

II. REJECTION OF CLAIM 22 UNDER 35 U.S.C. § 112, SECOND PARAGRAPH

Claim 22 is amended herein to overcome the rejection.

In view of the above, it is respectfully submitted that the rejection is overcome.

III. REJECTION OF CLAIMS 18-24, 33, AND 34 UNDER 35 U.S.C. 102(E) AS BEING ANTICIPATED BY BILLSTROM ET AL. (US005590133A).

The present invention as recited, for example, in claim 18 as amended herein, relates to a method comprising

> allocating, by the base station, just one time slot for signaling in the uplink direction from a respective mobile station in accordance with a predetermined sequence of the mobile stations, where even if the respective mobile station does not transmit any packet data for the duration of a current and next macroframe, the respective mobile station may transmit in the allocated time slot for signaling.

Billström discloses an apparatus and mobile stations that provide packet data services in TDMA cellular systems, based on providing shared packet data channels optimized for packet data. In column 7, lines 1-27, Billström teaches that in a cell which is only occasionally visited by a packet data user, the packet data channel can at times be allocated to the user, the channel allocation taking place upon inquiry of the user. In a cell with continual packet data traffic, the packet data channel(s) can be allocated semipermanently or dynamically, depending on the traffic load situation at any given time. The allocation is controlled by the base station controller. The packet data channel is described as a new type of logical channel on a physical TDMA channel, which is defined by a time slot. The packet data channel is optimized for the common packet data traffic from and to mobile stations capable of handling packet data, and is used for

the data traffic and for the signaling associated therewith. Uplink and downlink are considered as independent channel resources. In a TDMA frame, data from a mobile station can be transmitted in the uplink of the packet data channel, while it transmits data of another mobile station in the downlink. The packet data radio switching protocol over the packet channels is controlled by packet data traffic control in the base station. In a base station in which at least one packet data channel is allocated, the packet data traffic control has a physical connection for packet data transmission from and to mobile switching centers.

The teachings of Billström, however, are fundamentally different from the claimed invention. That is, in the present application, a time slot for signaling is provided at cyclic intervals in a GPRS-K channel, and one time slot for signaling in the uplink direction from the mobile station to the base station is exclusively allocated to a respective mobile station, by the base station according to a predetermined sequence of mobile stations. Each mobile station transmits in its allocated time slot for signaling, even when the mobile station transmits no packet data during the period of the current or next macro-frame. For example, each x-th time slot in a sequence of uplink signaling time slots is allocated to mobile station X. Thus, this time slot is exclusively allocated to the respective mobile station, and is not available to other mobile stations whose packet transmission takes place over the common GPRS-K channel. Accordingly, the base station receives signaling messages from the mobile station even when the mobile station transmits no packet data and thereby, may continuously receive signaling messages from the mobile station.

None of the above features are disclosed or suggested by Billström. Therefore, Billström fails to disclose allocating in the manner recited in claim 18 of the present application.

Similar to claim 18, claim 33 recites

> a control device to allocate time slots to the plurality of mobile stations, wherein just one time slot for signaling in the uplink direction is allocated to a respective mobile station according to a predetermined sequence of the mobile stations, the allocation being independent of any packet data transmission so that the mobile station transmits in the time slot allocated for signaling even if the mobile station does not transmit any packet data for the duration of a current and next macroframe,

which distinguishes over the teachings of Billström. Therefore, Billström also does not disclose the features recited in claim 33 of the present application.

Claims 19-24 and claim 34 depend from claims 18 and 33, respectively. Therefore, for at least the reasons that claims 18 and 33 distinguish over the cited prior art, it is respectfully submitted that claims 19-24 and 34 also distinguish over the cited prior art.

In view of the above, it is respectfully submitted that the rejection is overcome.

IV. REJECTION OF CLAIMS 25 AND 26 UNDER 35 U.S.C. 103(A) AS BEING UNPATENTABLE OVER BILLSTROM ET AL. (USP# 5,590,133) IN VIEW OF HAMALAINEN ET AL. (USP# 5,640,395)

The comments in section III, above, also apply here because claims 25 and 26 depend from claim 18. Therefore, for at least the reasons that claim 18 distinguishes over the cited prior art, it is respectfully submitted that claims 25 and 26 also distinguish over the cited prior art.

In view of the above, it is respectfully submitted that the rejection is overcome.

V. REJECTION OF CLAIMS 31 AND 32 UNDER 35 U.S.C. 103(A) AS BEING UNPATENTABLE OVER BILLSTROM ET AL. AS APPLIED TO CLAIM 18 ABOVE, AND FURTHER IN VIEW OF HAMALAINEN ET AL. AND SOWLES ET AL. (USP# 5,659,545)

The comments in section III, above, also apply here because claims 31 and 32 depend from claim 18. Therefore, for at least the reasons that claim 18 distinguishes over the cited prior art, it is respectfully submitted that claims 31 and 32 also distinguish over the cited prior art.

In view of the above, it is respectfully submitted that the rejection is overcome.

VI. CONCLUSION

In view of the foregoing amendments and remarks, it is respectfully submitted that each of the claims patentably distinguishes over the prior art, and therefore defines allowable subject matter. A prompt and favorable reconsideration of the rejection along with an indication of allowability of all pending claims are therefore respectfully requested.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

Please AMEND the claims in accordance with the following:

18. (ONCE AMENDED) A method for configuring a radio interface between a mobile station and a base station of a time-division multiplex mobile radio system for packet data transmission, the method comprising [the steps of]:

defining a transmission from a mobile station to the base station as an uplink direction;

defining a transmission from the base station to a mobile station as a downlink direction;

forming a channel by at least one time slot per [a] time-division multiplex frame, wherein the packet data transmission from a plurality of mobile stations takes place via the channel;

combining [52] frames to form a macroframe;

providing a time slot for signaling at cyclic intervals in the channel; and

allocating, by the base station, just one time slot for signaling [for] in the uplink direction [to the] from a respective mobile station in accordance with a predetermined sequence [which can be predetermined] of the mobile stations, where even if the respective mobile station does not transmit any packet data for the duration of a current and next macroframe, [wherein] the respective mobile station may transmit in the allocated time slot for signaling.

19. (ONCE AMENDED) [A] The method [for configuring a radio interface between a mobile station and a base station] as claimed in claim 18, further comprising [the steps of]:

determining a timing advance for the respective mobile station from transmissions by the mobile station in the allocated time slot; and

transmitting the timing advance in a time slot for signaling in the downlink direction to the corresponding mobile station.

20. (ONCE AMENDED) [A] The method [for configuring a radio interface between a mobile station and a base station] as claimed in claim 18, further comprising [the step of]:

defining the timing advance and values for a transmission power setting independently of one another.

21. (ONCE AMENDED) [A] The method [for configuring a radio interface between a mobile station and a base station] as claimed in claim 20, further comprising [the step of]:

defining, additionally, the timing advance and the values for the transmission power setting from the time slots for packet data transmission.

22. (ONCE AMENDED) [A] The method [for configuring a radio interface between a mobile station and a base station] as claimed in claim 18, further comprising [the step of]:

using [longer] transmission block types of a predetermined size for specific configuration data in the time slots for signaling in the uplink direction.

23. (ONCE AMENDED) [A] The method [for configuring a radio interface between a mobile station and a base station] as claimed in claim 18, further comprising [the step of]:

transmitting configuration data defined in the downlink direction in time slots for packet data transmission.

24. (ONCE AMENDED) [A] The method [for configuring a radio interface between a mobile station and a base station] as claimed in claim 18, further comprising [the step of]:

providing, by the base station, the timing advance for the configuration of the radio interface without being controlled by a base station controller.

25. (ONCE AMENDED) [A] The method [for configuring a radio interface between a mobile station and a base station] as claimed in claim 18, further comprising [the step of]:

combining a plurality of time slots for signaling to form a signaling block.

26. (ONCE AMENDED) [A] The method [for configuring a radio interface between a mobile station and a base station] as claimed in claim 25, further comprising [the step of]:

combining the time slots for signaling in accordance with a sequence which can be predetermined, wherein remaining time slots are provided for an adjacent cell measurement of the mobile station.

27. (ONCE AMENDED) [A] The method [for configuring a radio interface between a mobile station and a base station] as claimed in claim 18, further comprising [the step of]:

providing information in time slots for signaling with additional coding.

28. (ONCE AMENDED) [A] The method [for configuring a radio interface between a

mobile station and a base station] as claimed in claim 18, further comprising [the step of]:

enabling the packet data transmission to take place in both the uplink and downlink directions independently of one another.

29. (ONCE AMENDED) [A] The method [for configuring a radio interface between a mobile station and a base station] as claimed in claim 18, further comprising [the steps of]:

designating, additionally, the mobile stations for packet data transmission by abbreviated identifiers; and

allocating, via the time slots for signaling in the downlink direction, one or more time slots for signaling in the uplink direction to the mobile stations by means of indicator messages which contain abbreviated identifiers and time slot designations.

30. (ONCE AMENDED) [A] The method [for configuring a radio interface between a mobile station and a base station] as claimed in claim 18, further comprising [the step of]:

transmitting, by a mobile station per time slot for signaling in the uplink direction, a self-contained message which contains a reception level of the mobile station.

31. (ONCE AMENDED) [A] The method [for configuring a radio interface between a mobile station and a base station] as claimed in claim 18, further comprising [the step of]:

providing transmissions, from the mobile station in the time slots for signaling allocated to it, access blocks having an extended preceding or subsequent guard time, whose transmission time results from a preceding transmission time, a signaled timing advance and an offset value.

32. (ONCE AMENDED) [A] The method [for configuring a radio interface between a mobile station and a base station] as claimed in claim 31, further comprising [the step of]:

choosing the offset value such that a range which corresponds to the offset value is greater than the distance which the mobile station can travel between two transmissions for timing advance definitions at a maximum permissible speed.

33. (ONCE AMENDED) A base station system for configuring a radio interface between a mobile station and a base station of a time-division multiplex mobile radio system for packet data transmission, comprising:

a base station;

a plurality of mobile stations, wherein a transmission from a mobile station to the base station is defined as an uplink direction, and a transmission from the base station to a mobile station is defined as a downlink direction;

a channel formed by at least one time slot per time-division multiplex frame, wherein the packet data transmission from the plurality of mobile stations takes place via the channel;

a macroframe formed from a combination of [52] frames;

a time slot for signaling provided at cyclic intervals in the channel; and

a control device [for allocating] to allocate time slots to the plurality of mobile stations, wherein just one time slot for signaling [for] in the uplink direction is allocated to [the] a respective mobile station [after] according to a predetermined sequence [which can be predetermined] of the mobile stations, [and wherein] the allocation [is] being independent of any packet data transmission [such] so that the mobile station transmits in the time slot allocated for signaling even if the mobile station does not transmit any packet data for the duration of a current and next macroframe.

34. (ONCE AMENDED) [A] The base station system [for configuring a radio interface between a mobile station and a base station] as claimed in claim 33, wherein timing advances for the mobile stations are transmitted[,] as configuration data for the plurality of mobile stations[,] in a time slot for signaling in the downlink direction.